4

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10/617,901	07/10/2003	Mark Vandevert Dunkle	AM 7134	4077

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EXAMINER
SAEED, USMAAN

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/617,901	DUNKLE, MARK VANDEVERT	
	Examiner	Art Unit	
	Usmaan Saeed	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *7/10/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/05/2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6, 13, 15-16, 21-22, 23-27, 34, 36-37, 42, 44 and 46-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Guillermo Rudolfo Chacon** (**Chacon** hereinafter) (U.S. Patent No. 6,128,588), in view of **Floyd et al.** (**Floyd** hereinafter) (U.S. PG Pub No 2002/0105355).

With respect to claim 1, **Chacon** teaches **a method of storing information in a database to characterize attributes outputted by different classes of equipment, comprising the steps of:**

"providing a database memory device" as auto scheduling system 22 includes scheduler database 30 (**Chacon** Col 2, Lines 64-65).

"storing in the database memory device a plurality of attribute data records, wherein the step of storing each attribute data record includes" as scheduler database 30 stores production models for simulation as well as data extracted from the manufacturing execution system 20 to be used for the simulation. The stored information includes T1 and T2 parameters, lot status, machine tact (time standard), and Kanban worksheets (**Chacon** Col 2, Lines 66-67 & Col 3, Lines 1-4).

"storing in that record a first field identifying a class of equipment" as there may be a number of different algorithms in use depending on the type of equipment (**Chacon** Col 39, Lines 46-48 & fig 5). The correct set of formulae to be applied to a given row on the tact table will be found by looking up the tact formula field in the corresponding stnfamdef record (**Chacon** Col 39, Lines 52-55). The table in Col 43, & Lines 15-25 teach that stnfamdef is equipment type record.

"storing in that record a second field identifying an attribute whose value is outputted by the class of equipment identified by the first field of that record, wherein said attribute is a sensor measurement or operating parameter of said class of equipment identified by said first field" as according to the present

invention, a method and system for creating customized machine tact information includes defining time standards as a function of process parameter and equipment parameters. For example, if a process parameter such as temperature, pressure, etc. and an equipment parameter such as equipment brand name, model, etc (**Chacon** Col 2, Lines 24-29). The machine tact information is created by accessing and using the stnfamdef table, which contains equipment type records defines/outputs the attributes/parameters. Examiner interprets temperature and pressure as a sensor measurement.

"storing in that record a third field specifying an ID which the class of equipment identified by the first field of that record assigns to the attribute value identified by the second field of that record" as the rules accumulate counters for the stn (equipment identification) which are then checked against the PM limit table for that equipment ID (**Chacon** Col 30, Lines 35-37). The device name will be a concatenation of the part ID and primary procedure ID. There is an explicit field for primary procedure ID (**Chacon** Col 18, Lines 35-38). The counters for equipment identification are checking the table for the equipment ID and the equipment ID is linked/assigned to the process.

Chacon teaches the elements of claim 1 as noted above but does not explicitly teaches **"an attribute whose value is outputted by the class of equipment identified by the first field of that record."**

However, **Floyd** teaches **"an attribute whose value is outputted by the class of equipment identified by the first field of that record"** as a test signal is split and

supplied to multiple modules. Passive testing may be performed by monitoring parameters of the module while the test signal is supplied to the module. Active testing may be a functional test of the module in which the test signal is supplied to, processed by, and output from the module. Such test signals output from the modules are switched to the test equipment on a time-share basis. In this way, the number or expensive test equipment set-ups may reduced. The controller for each virtual oven also generates displays so that a user can track the test progress of all modules within the virtual oven. The controller also builds a database of the active and passive tests for each module (**Floyd** Abstract).

Further, **Floyd** teaches **"the three fields"** as the equipment table 520 may include the following information items or field: equipment brand identifier, equipment brand name, equipment type identifier, equipment type description and other information items that are used to uniquely identify each piece of test and communication equipment (**Floyd** Paragraph 0144).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Floyd's** teaching would have allowed **Chacon** to provide a corresponding gross reduction in chamber throughput and efficiency and to permit asynchronous loading and test starting of an arbitrary number of modules.

Claims 21, 42 and 44 are essentially the same as claim 1 except they set forth the claimed invention as an apparatus, a data storage medium and are rejected for the same reasons as applied hereinabove.

With respect to claim 2, **Chacon** teaches **"the method of claim 1, wherein, for each attribute data record, the ID stored in the third field uniquely specifies the attribute stored in the second field for the class of equipment stored in the first field"** as the rules accumulate counters for the stn (equipment identification) which are then checked against the PM limit table for that equipment ID (**Chacon** Col 30, Lines 35-37). According to the present invention, a method and system for creating customized machine tact information includes defining time standards as a function of process parameter and equipment parameters. For example, if a process parameter such as temperature, pressure, etc. and an equipment parameter such as equipment brand name, model, etc (**Chacon** Col 2, Lines 24-29). The equipment has an ID and the equipment and the ID are specifying the process and equipment parameters/attributes.

Claims 3, 4, 23, 24, and 25 are same as claim 2 except claims 23, 24, and 25 set forth the claimed invention as an apparatus and are rejected for the same reasons as applied hereinabove.

With respect to claim 5, **Chacon** teaches **the method of claim 1, wherein, for at least one attribute data record, the step of storing the second field further includes the step of:**

"storing a fourth field identifying a position of a chamber connected to the class of equipment identified in the first field" as (**Chacon** Col 31, Lines 1-20). This table teaches us that the PCounter "arg" contains the position of the chambers connected, which is 1-3.

Claim 26 is essentially the same as claim 5 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 6, **Chacon** teaches **"the method of claim 1, wherein, for each attribute data record, the first field identifies at least one model of equipment"** as an equipment parameter such as equipment brand name, model etc (**Chacon** Col 2, Lines 27-29). Scheduler database 30 stores production models for simulation as well as data extracted from the manufacturing execution system 20 to be used for the simulation (**Chacon** Col 2, Lines 66-67 & Col 3, Lines 1-2).

Claim 27 is essentially the same as claim 6 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 13, **Chacon** teaches **the method of claim 1, wherein the step of storing a plurality of attribute database records comprises the steps of:**

"storing in the database memory a first record including said first field, wherein the first field of the first record identifies a first class of equipment that includes a first model of equipment" as there must be a record for each stnfam referenced by stndef table (Chacon Col 17, Lines 33-34 & fig 7). An equipment parameter such as equipment brand name, model etc (**Chacon** Col 2, Lines 27-29). Scheduler database 30 stores production models for simulation as well as data extracted from the manufacturing execution system 20 to be used for the simulation (**Chacon** Col 2, Lines 66-67 & Col 3, Lines 1-2). These lines teach us that there are records for stnfam/equipment type and stndef/equipment ID and the models of these equipments are also stored.

"storing in the database memory a second record including said first field, wherein the first field of the second record identifies a second class of equipment that includes a second model of equipment different from the first model" as there must be a record for each stnfam referenced by stndef table (Chacon Col 17, Lines 33-34 & fig 7). An equipment parameter such as equipment brand name, model etc (**Chacon** Col 2, Lines 27-29). Scheduler database 30 stores production models for simulation as well as data extracted from the manufacturing execution system 20 to be used for the simulation (**Chacon** Col 2, Lines 66-67 & Col 3, Lines 1-2). These lines teach us that there are multiple records for stnfam/equipment type and stndef/equipment ID and the models of these equipments are also stored.

Claim 34 is essentially the same as claim 13 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 15, **Chacon** teaches **"the method of claim 1, wherein, for at least one of the attribute data records, the attribute identified in the step of storing the first second field is a measurement of a process being performed in a semiconductor fabrication process chamber"** as wafer fabrication, for example, involves complex dynamic production systems. The measurement of their capacity and performance such as lead-time and wafer output are not accurate enough if a solution capable of modeling the dynamic fabrication conditions and variance in the system is not used (**Chacon** Col 1, Lines 47-52).

Claim 36 is essentially the same as claim 15 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 16, **Chacon** teaches **"the method of claim 1, wherein, for at least one of the attribute data records, the attribute identified in the step of storing the first second field is an operating condition of a process being performed in a semiconductor fabrication process chamber"** as the present invention relates to an integrated characterization and scheduling system for fabrication production systems such as wafer fabrication (**Chacon** Col 2, Lines 18-20). For

example, if a process parameter such as temperature, pressure, etc. and an equipment parameter such as equipment brand name, model, etc (**Chacon** Col 2, Lines 26-29). The process parameters are the operating conditions for the process being performed.

Claim 37 is essentially the same as claim 16 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 22, **Chacon** does not explicitly teach **the apparatus of claim 21, further comprising:**

"a communications interface capable of being connected to receive data from the class of equipment identified in one of the data records

wherein the computer is connected to read data from the communications interface."

However, **Floyd** discloses **"a communications interface capable of being connected to receive data from the class of equipment identified in one of the data records, wherein the computer is connected to read data from the communications interface"** as (**Floyd** Paragraph 0143).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Floyd's** teaching would have allowed **Chacon** to provide a corresponding gross reduction in chamber throughput and efficiency and to permit asynchronous loading and test starting of an arbitrary number of modules.

With respect to claim 46, **Chacon** teaches **the method of claim 1, further comprising the steps of:**

"identifying a first class of equipment to which the first manufacturing equipment belongs" as there may be a number of different algorithms in use depending on the type of equipment (**Chacon** Col 39, Lines 46-48 & fig 5). The correct set of formulae to be applied to a given row on the tact table will be found by looking up the tact formula field in the corresponding stnfamdef record (**Chacon** Col 39, Lines 52-55). The table in Col 43, & Lines 15-25 teach that stnfamdef is equipment type record. The equipment type is interpreted as a class of equipment.

"retrieving from the database memory device one of said attribute data records such that the first, second and third fields of the retrieved attribute data record respectively identify: (i) said first class of equipment, (ii) a first attribute, and (iii) a first ID" as auto scheduling system 22 includes scheduler database 30 (**Chacon** Col 2, Lines 64-65). There may be a number of different algorithms in use depending on the type of equipment (**Chacon** Col 39, Lines 46-48 & fig 5). The correct set of formulae to be applied to a given row on the tact table will be found by looking up the tact formula field in the corresponding stnfamdef record (**Chacon** Col 39, Lines 52-55). The table in Col 43, & Lines 15-25 teach that stnfamdef is equipment type record. The equipment type is interpreted as a class of equipment.

According to the present invention, a method and system for creating customized machine tact information includes defining time standards as a function of process

parameter and equipment parameters. For example, if a process parameter such as temperature, pressure, etc. and an equipment parameter such as equipment brand name, model, etc (**Chacon** Col 2, Lines 24-29). The machine tact information is created by accessing and using the stnfamdef table, which contains equipment type records defines/outputs the attributes/parameters. Examiner interprets temperature and pressure as a sensor measurement.

The rules accumulate counters for the stn (equipment identification), which are then checked against the PM limit table for that equipment ID (**Chacon** Col 30, Lines 35-37). The counters for equipment identification are checking the table for the equipment ID and the equipment ID is linked/assigned to the process.

"using the first ID to retrieve a value of the first attribute from the first manufacturing equipment" as figure 5 (Chacon Figure 5).

Chacon teaches the elements of claim 46 as noted above but does not explicitly discloses **"providing a first manufacturing equipment."**

However, **Floyd** discloses, **"providing a first manufacturing equipment"** as (**Floyd** Paragraph 0145).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Floyd's** teaching would have allowed **Chacon** to provide a corresponding gross reduction in chamber throughput and efficiency and to permit asynchronous loading and test starting of an arbitrary number of modules.

With respect to claim 47, **Chacon** teaches **the method of claim 4, further comprising the steps of:**

"identifying a first class of equipment to which the first manufacturing equipment belongs" as there may be a number of different algorithms in use depending on the type of equipment (**Chacon** Col 39, Lines 46-48 & fig 5). The correct set of formulae to be applied to a given row on the tact table will be found by looking up the tact formula field in the corresponding stnfamdef record (**Chacon** Col 39, Lines 52-55). The table in Col 43, & Lines 15-25 teach that stnfamdef is equipment type record. The equipment type is interpreted as a class of equipment.

"retrieving from the database memory device one of said attribute data records such that the first, second and third fields of the retrieved attribute data record respectively identify: (i) said first class of equipment, (ii) a first attribute, and (iii) a first command" as auto scheduling system 22 includes scheduler database 30 (**Chacon** Col 2, Lines 64-65). There may be a number of different algorithms in use depending on the type of equipment (**Chacon** Col 39, Lines 46-48 & fig 5). The correct set of formulae to be applied to a given row on the tact table will be found by looking up the tact formula field in the corresponding stnfamdef record (**Chacon** Col 39, Lines 52-55). The table in Col 43, & Lines 15-25 teach that stnfamdef is equipment type record. The equipment type is interpreted as a class of equipment.

According to the present invention, a method and system for creating customized machine tact information includes defining time standards as a function of process parameter and equipment parameters. For example, if a process parameter such as

temperature, pressure, etc. and an equipment parameter such as equipment brand name, model, etc (**Chacon** Col 2, Lines 24-29). The machine tact information is created by accessing and using the stnfamdef table, which contains equipment type records defines/outputs the attributes/parameters. Examiner interprets temperature and pressure as a sensor measurement.

The rules accumulate counters for the stn (equipment identification), which are then checked against the PM limit table for that equipment ID (**Chacon** Col 30, Lines 35-37).

"sending the first command to the first manufacturing equipment" as figure 5 (Chacon Figure 5).

"wherein the first manufacturing equipment outputs a value of the first attribute in response to said step of sending the first command" as figure 5 (Chacon Figure 5). Examiner interprets entering of equipment ID as a first command.

Chacon teaches the elements of claim 47 as noted above but does not explicitly discloses **"providing a first manufacturing equipment" "sending the first command to the first manufacturing equipment" and "wherein the first manufacturing equipment outputs a value of the first attribute in response to said step of sending the first command."**

However, **Floyd** discloses **"providing a first manufacturing equipment" "sending the first command to the first manufacturing equipment" and "wherein the first manufacturing equipment outputs a value of the first attribute in**

response to said step of sending the first command" as (**Floyd** Paragraph 0145, and 0148).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Floyd's** teaching would have allowed **Chacon** to provide a corresponding gross reduction in chamber throughput and efficiency and to permit asynchronous loading and test starting of an arbitrary number of modules.

With respect to claim 48, **Chacon** discloses **the method of claim 1, further comprising the steps of:**

"identifying a first class of equipment to which the first manufacturing equipment belongs" as there may be a number of different algorithms in use depending on the type of equipment (**Chacon** Col 39, Lines 46-48 & fig 5). The correct set of formulae to be applied to a given row on the tact table will be found by looking up the tact formula field in the corresponding stnfamdef record (**Chacon** Col 39, Lines 52-55). The table in Col 43, & Lines 15-25 teach that stnfamdef is equipment type record. The equipment type is interpreted as a class of equipment.

"retrieving from the database memory device one of said attribute data records such that the first, second and third fields of the retrieved attribute data record respectively identify: (i) said first class of equipment, (ii) a first attribute, and (iii) a first ID that identifies a first one of said signal lines" as auto scheduling system 22 includes scheduler database 30 (**Chacon** Col 2, Lines 64-65). There may be

a number of different algorithms in use depending on the type of equipment (**Chacon** Col 39, Lines 46-48 & fig 5). The correct set of formulae to be applied to a given row on the tact table will be found by looking up the tact formula field in the corresponding stnfamdef record (**Chacon** Col 39, Lines 52-55). The table in Col 43, & Lines 15-25 teach that stnfamdef is equipment type record. The equipment type is interpreted as a class of equipment.

According to the present invention, a method and system for creating customized machine tact information includes defining time standards as a function of process parameter and equipment parameters. For example, if a process parameter such as temperature, pressure, etc. and an equipment parameter such as equipment brand name, model, etc (**Chacon** Col 2, Lines 24-29). The machine tact information is created by accessing and using the stnfamdef table, which contains equipment type records defines/outputs the attributes/parameters. Examiner interprets temperature and pressure as a sensor measurement.

The rules accumulate counters for the stn (equipment identification), which are then checked against the PM limit table for that equipment ID (**Chacon** Col 30, Lines 35-37).

Chacon teaches the elements of claim 48 as noted above but does not explicitly discloses **"providing a first manufacturing equipment having a plurality of signal lines for outputting attribute data" and "receiving a value of the first attribute from the first signal line."**

However, **Floyd** discloses **"providing a first manufacturing equipment having a plurality of signal lines for outputting attribute data" and "receiving a value of the first attribute from the first signal line"** as (**Floyd** Paragraph 0145, 0148, 0090 and Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Floyd's** teaching would have allowed **Chacon** to provide a corresponding gross reduction in chamber throughput and efficiency and to permit asynchronous loading and test starting of an arbitrary number of modules.

With respect to claim 49, **Chacon** teaches **the method of claim 1, further comprising the steps of:**

"identifying a first class of equipment to which the first manufacturing equipment belongs" as there may be a number of different algorithms in use depending on the type of equipment (**Chacon** Col 39, Lines 46-48 & fig 5). The correct set of formulae to be applied to a given row on the tact table will be found by looking up the tact formula field in the corresponding stnfamdef record (**Chacon** Col 39, Lines 52-55). The table in Col 43, & Lines 15-25 teach that stnfamdef is equipment type record. The equipment type is interpreted as a class of equipment.

"retrieving from the database memory device one of said attribute data records such that the first, second and third fields of the retrieved attribute data record respectively identify: (i) said first class of equipment, (ii) a first attribute,

and (iii) a first ID that identifies a first address transmitted by the first manufacturing equipment when it transmits the first attribute" as auto scheduling system 22 includes scheduler database 30 (**Chacon** Col 2, Lines 64-65). There may be a number of different algorithms in use depending on the type of equipment (**Chacon** Col 39, Lines 46-48 & fig 5). The correct set of formulae to be applied to a given row on the tact table will be found by looking up the tact formula field in the corresponding stnfamdef record (**Chacon** Col 39, Lines 52-55). The table in Col 43, & Lines 15-25 teach that stnfamdef is equipment type record. The equipment type is interpreted as a class of equipment.

According to the present invention, a method and system for creating customized machine tact information includes defining time standards as a function of process parameter and equipment parameters. For example, if a process parameter such as temperature, pressure, etc. and an equipment parameter such as equipment brand name, model, etc (**Chacon** Col 2, Lines 24-29). The machine tact information is created by accessing and using the stnfamdef table, which contains equipment type records defines/outputs the attributes/parameters. Examiner interprets temperature and pressure as a sensor measurement.

The rules accumulate counters for the stn (equipment identification), which are then checked against the PM limit table for that equipment ID (**Chacon** Col 30, Lines 35-37).

Chacon teaches the elements of claim 49 as noted above but does not explicitly discloses **"providing a first manufacturing equipment having a plurality of signal**

lines for outputting attribute data," "receiving attribute data from the first manufacturing equipment" and "using the first ID to locate a value of the first attribute within the attribute data received in the receiving step."

However, **Floyd** discloses **"providing a first manufacturing equipment having a plurality of signal lines for outputting attribute data," "receiving attribute data from the first manufacturing equipment" and "using the first ID to locate a value of the first attribute within the attribute data received in the receiving step"** as (**Floyd** Paragraph 0145, 0148, 0090 and Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Floyd's** teaching would have allowed **Chacon** to provide a corresponding gross reduction in chamber throughput and efficiency and to permit asynchronous loading and test starting of an arbitrary number of modules.

Claim 50 is essentially the same as claim 49 except it recites using offsets instead of ID's and is rejected for the same reasons as applied hereinabove. Chacon teaches offsets in figure 5.

3. Claims 7-12, 14, 28-33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Guillermo Rudolfo Chacon** (U.S. Patent No. 6,128,588) in view of **Floyd et al.** (U.S. PG Pub No 2002/0105355) as applied to claims 1-6, 13, 15-16, 21-

22, 23-27, 34, 36-37, 42, 44 and 46-50 above, in view of **Robert C. Beauchesne** (**Beauchesne** hereinafter) (U.S. Patent No 5,777,876).

With respect to claim 7, **Chacon and Floyd** do not explicitly teach **"the method of claim 1, wherein, for each attribute data record, the first field identifies at least one version of equipment."**

However, **Beauchesne** teaches **"the method of claim 1, wherein, for each attribute data record, the first field identifies at least one version of equipment"** as the product main fields also includes a 4 digit product version field for storing information coded value specifying the manufacturing version of the board indicating the particular assembly line (equipment complement) on which the board will be manufactured (e.g. A, B) (**Beauchesne** Col 5, Lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Beauchesne's** teaching would have allowed **Chacon and Floyd** to manage and control process information pertaining to a variety of different equipments manufactured on a number of different manufacturing lines (**Beauchesne** Col 1, Lines 66-67 & Col 2, Lies 1-2) by having different versions of an equipment.

Claim 28 is essentially the same as claim 7 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 8, **Chacon** teaches, **"storing a first subordinate field that identifies a model of equipment"** as an equipment parameter such as equipment brand name, model etc (**Chacon** Col 2, Lines 27-29). Scheduler database 30 stores production models for simulation as well as data extracted from the manufacturing execution system 20 to be used for the simulation (**Chacon** Col 2, Lines 66-67 & Col 3, Lines 1-2).

Chacon discloses the elements of claim 8 as noted above but does not explicitly teach the step of **"storing a second subordinate field that identifies a version of the model of equipment identified in the first subordinate field."**

However, **Beauchesne** discloses **"storing a second subordinate field that identifies a version of the model of equipment identified in the first subordinate field"** as The product main fields also includes a 4 digit product version field for storing information coded value specifying the manufacturing version of the board indicating the particular assembly line (equipment complement) on which the board will be manufactured (e.g. A, B). A Generic name field is used for storing information which may describe the product in generic terms and this is especially useful in situations where a particular product is associated with a specific model or feature name: Taurus, Legend, etc (**Beauchesne** Col 5, Lines 1-67 & Col 6, Lines 1-5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Beauchesne's** teaching would have allowed **Chacon and Floyd** to manage and control process information pertaining to a variety of different equipments manufactured on a

number of different manufacturing lines (**Beauchesne** Col 1, Lines 66-67 & Col 2, Lies 1-2) by having different versions of an equipment.

Claim 29 is essentially the same as claim 8 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 9, **Chacon and Floyd** do not explicitly teach **the method of claim 1, wherein, for at least one attribute data record, the step of storing the first field includes:**

"storing first and second subordinate fields that collectively identify a range of versions of an equipment model."

However, **Beauchesne** discloses **"storing first and second subordinate fields that collectively identify a range of versions of an equipment model"** as other fields include a 10 digit current revision field, a 10 digit previous revision field, a 40 digit comment text field, a 8 digit source locating field and a 12 digit file data field. The revision field is used for storing a coded value designating the most recent revision made to any of the steps associated with the product. The previous revision field is used for storing a coded value designating the previous change (**Beauchesne** Col 6, Lines 12-19). Different revisions give different versions. Therefore the range of revisions gives us the range of versions.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because

Beauchesne's teaching would have allowed **Chacon and Floyd** to manage and control process information pertaining to a variety of different equipments manufactured on a number of different manufacturing lines (**Beauchesne** Col 1, Lines 66-67 & Col 2, Lies 1-2) by having different versions of an equipment.

Claim 30 is essentially the same as claim 9 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 10, **Chacon and Floyd** do not explicitly teach **"the method of claim 9, wherein the first and second subordinate fields respectively identify a first version and a last version in said range of versions."**

However, **Beauchesne** discloses **"the method of claim 9, wherein the first and second subordinate fields respectively identify a first version and a last version in said range of versions"** as other fields include a 10 digit current revision field, a 10 digit previous revision field, a 40 digit comment text field, a 8 digit source locating field and a 12 digit file data field. The revision field is used for storing a coded value designating the most recent revision made to any of the steps associated with the product. The previous revision field is used for storing a coded value designating the previous change (**Beauchesne** Col 6, Lines 12-19). The previous revisions tell us about the first version and the recent revision tells us about the last version.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because

Beauchesne's teaching would have allowed **Chacon and Floyd** to manage and control process information pertaining to a variety of different equipments manufactured on a number of different manufacturing lines (**Beauchesne** Col 1, Lines 66-67 & Col 2, Lies 1-2) by having different versions of an equipment.

Claim 31 is essentially the same as claim 10 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 11 **Chacon and Floyd** do not explicitly teach **the method of claim 1, wherein, for at least one attribute data record, the step of storing the first field includes:**

storing first and second subordinate fields that collectively identify a range of revision dates of an equipment model.

However, **Beauchesne** discloses, **"storing first and second subordinate fields that collectively identify a range of revision dates of an equipment model"** as other fields include a 10 digit current revision field, a 10 digit previous revision field, a 40 digit comment text field, a 8 digit source locating field and a 12 digit file data field. The revision field is used for storing a coded value designating the most recent revision made to any of the steps associated with the product. The previous revision field is used for storing a coded value designating the previous change (**Beauchesne** Col 6, Lines 12-19). Figure **2b** shows us the time/data for different revisions.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Beauchesne's** teaching would have allowed **Chacon and Floyd** to manage and control process information pertaining to a variety of different equipments manufactured on a number of different manufacturing lines (**Beauchesne** Col 1, Lines 66-67 & Col 2, Lies 1-2) by having different versions of an equipment.

Claim 32 is essentially the same as claim 11 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 12, **Chacon and Floyd** do not explicitly teach **"the method of claim 11, wherein the first and second subordinate fields respectively identify a first revision date and a last revision date in said range of revision dates."**

However, **Beauchesne** teaches **"the method of claim 11, wherein the first and second subordinate fields respectively identify a first revision date and a last revision date in said range of revision dates"** as other fields include a 10 digit current revision field, a 10 digit previous revision field, a 40 digit comment text field, a 8 digit source locating field and a 12 digit file data field. The revision field is used for storing a coded value designating the most recent revision made to any of the steps associated with the product. The previous revision field is used for storing a coded value designating the previous change (**Beauchesne** Col 6, Lines 12-19). Figure **2b**

shows us the time/data for different revisions and the previous revision would have the first revision dates and the recent revision would have the last revision dates.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Beauchesne's** teaching would have allowed **Chacon and Floyd** to manage and control process information pertaining to a variety of different equipments manufactured on a number of different manufacturing lines (**Beauchesne** Col 1, Lines 66-67 & Col 2, Lies 1-2) by having different versions of an equipment.

Claim 33 is essentially the same as claim 12 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 14, **Chacon** teaches **"storing in the database memory a first record including said first field, wherein the first field of the first record identifies a first class of equipment"** as there may be a number of different algorithms in use depending on the type of equipment (**Chacon** Col 39, Lines 46-48 & fig 5). The correct set of formulae to be applied to a given row on the tact table will be found by looking up the tact formula field in the corresponding stnfamdef record (**Chacon** Col 39, Lines 52-55). The table in Col 43, & Lines 15-25 teach that stnfamdef is equipment type record.

Chacon discloses the elements of claim 14 as noted above but does not explicitly teach the step of **"first version of a first model of equipment" and "second**

version of said first model of equipment, the second version being different from the first version."

However, **Beauchesne** discloses **"first version of a first model of equipment"** as the product main fields also includes a 4 digit product version field for storing information coded value specifying the manufacturing version of the board indicating the particular assembly line (equipment complement) on which the board will be manufactured (e.g. A, B) (**Beauchesne** Col 5, Lines 62-67) **and "second version of said first model of equipment, the second version being different from the first version"** as other fields include a 10 digit current revision field, a 10 digit previous revision field, a 40 digit comment text field, a 8 digit source locating field and a 12 digit file data field. The revision field is used for storing a coded value designating the most recent revision made to any of the steps associated with the product. The previous revision field is used for storing a coded value designating the previous change (**Beauchesne** Col 6, Lines 12-19). The previous revisions tell us about the first version and the recent revision tells us about the last/second version.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Beauchesne's** teaching would have allowed **Chacon and Floyd** to manage and control process information pertaining to a variety of different equipments manufactured on a number of different manufacturing lines (**Beauchesne** Col 1, Lines 66-67 & Col 2, Lies 1-2) by having different versions of an equipment.

Claim 35 is essentially the same as claim 14 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

4. Claims 17-20, 38-41, 43 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Guillermo Rudolfo Chacon** (U.S. Patent No. 6,128,588) in view of **Floyd et al.** (U.S. PG Pub No 2002/0105355) as applied to claims 1-6, 13, 15-16, 21-22, 23-27, 34, 36-37, 42, 44 and 46-50 above, in view of **Martorana et al.** (**Martorana** hereinafter) (U.S. PG Pub No. 2003/0236628).

With respect to claim 17, **Chacon** teaches **a method of storing information in a database to characterize attributes outputted by different classes of equipment, comprising the steps of:**

"providing a database memory device" as auto scheduling system 22 includes scheduler database 30 (**Chacon** Col 2, Lines 64-65).

"storing in the database memory device a plurality of attribute data records, wherein the step of storing each attribute data record includes" as scheduler database 30 stores production models for simulation as well as data extracted from the manufacturing execution system 20 to be used for the simulation. The stored information includes T1 and T2 parameters, lot status, machine tact (time standard), and Kanban worksheets (**Chacon** Col 2, Lines 66-67 & Col 3, Lines 1-4).

"storing in that record a first field identifying a class of equipment" as there may be a number of different algorithms in use depending on the type of equipment

(**Chacon** Col 39, Lines 46-48 & fig 5). The correct set of formulae to be applied to a given row on the tact table will be found by looking up the tact formula field in the corresponding stnfamdef record (**Chacon** Col 39, Lines 52-55). The table in Col 43, & Lines 15-25 teach that stnfamdef is equipment type record.

"storing in that record a second field identifying an attribute whose value is outputted by the class of equipment identified by the first field of that record" as according to the present invention, a method and system for creating customized machine tact information includes defining time standards as a function of process parameter and equipment parameters. For example, if a process parameter such as temperature, pressure, etc. and an equipment parameter such as equipment brand name, model, etc (**Chacon** Col 2, Lines 24-29). The machine tact information is created by accessing and using the stnfamdef table, which contain equipment type records defines/outputs the attributes/parameters.

Chacon discloses the elements of claim 17 as noted above but does not explicitly teach the step of **"storing in that record a third field specifying a conversion parameter that defines a conversion of the value of the attribute identified in the second field into physical units of measurement" and "an attribute whose value is outputted by the class of equipment identified by the first field of that record."**

However, **Floyd** teaches **"an attribute whose value is outputted by the class of equipment identified by the first field of that record"** as a test signal is split and supplied to multiple modules. Passive testing may be performed by monitoring

parameters of the module while the test signal is supplied to the module. Active testing may be a functional test of the module in which the test signal is supplied to, processed by, and output from the module. Such test signals output from the modules are switched to the test equipment on a time-share basis. In this way, the number or expensive test equipment set-ups may reduced. The controller for each virtual oven also generates displays so that a user can track the test progress of all modules within the virtual oven. The controller also builds a database of the active and passive tests for each module (**Floyd** Abstract).

Further, **Floyd** teaches **"the three fields"** as the equipment table 520 may include the following information items or field: equipment brand identifier, equipment brand name, equipment type identifier, equipment type description and other information items that are used to uniquely identify each piece of test and communication equipment (**Floyd** Paragraph 0144).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Floyd's** teaching would have allowed **Chacon** to provide a corresponding gross reduction in chamber throughput and efficiency and to permit asynchronous loading and test starting of an arbitrary number of modules.

Chacon and Floyd teach the elements of claim 17 but do not explicitly teach **"storing in that record a third field specifying a conversion parameter that defines a conversion of the value of the attribute identified in the second field into physical units of measurement."**

However, **Martorana** discloses **"storing in that record a third field specifying a conversion parameter that defines a conversion of the value of the attribute identified in the second field into physical units of measurement"** as a system includes a thermal isolating chamber, an inertial measurement unit for making inertial measurements, and a temperature control system (**Martorana** paragraph 0014).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Mortorana's** teaching would have allowed **Chacon and Floyd** to effectively control the temperature of an inertial measurement unit within an isolating chamber (**Mortorana** paragraph 0008) by identifying the units of measurement for the attribute such as temperature.

Claims 38, 43 and 45 are essentially the same as claim 17 except they set forth the claimed invention as an apparatus, a data storage medium and are rejected for the same reasons as applied hereinabove.

With respect to claim 18, **Chacon and Floyd** do not explicitly teach **"the method of claim 17, wherein, for at least one of the attribute data records, the conversion parameter stored in the third field specifies a physical unit of measurement."**

However, **Mortorana** discloses **"the method of claim 17, wherein, for at least one of the attribute data records, the conversion parameter stored in the third field specifies a physical unit of measurement"** as a system includes a thermal

isolating chamber, an inertial measurement unit for making inertial measurements, and a temperature control system (**Martorana** paragraph 0014).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Mortorana's** teaching would have allowed **Chacon and Floyd** to effectively control the temperature of an inertial measurement unit within an isolating chamber (**Mortorana** paragraph 0008) by identifying the units of measurement for the attribute such as temperature.

Claim 39 is essentially the same as claim 18 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 19, **Chacon and Floyd** do not explicitly teach **"the method of claim 17, wherein, for at least one of the attribute data records, the conversion parameter stored in the third field specifies a scale factor."**

However, **Mortorana** discloses **"the method of claim 17, wherein, for at least one of the attribute data records, the conversion parameter stored in the third field specifies a scale factor"** as reduces temperature stability requirements because sensor bias calibration and gyroscope scale factor calibration can be performed simultaneously (**Mortorana** paragraph 0042).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because

Mortorana's teaching would have allowed **Chacon and Floyd** to effectively control the temperature of an inertial measurement unit within an isolating chamber (**Mortorana** paragraph 0008) by identifying the units of measurement for the attribute such as temperature.

Claim 40 is essentially the same as claim 19 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 20, **Chacon and Floyd** do not explicitly teach **"the method of claim 17, wherein, for at least one of the attribute data records, the conversion parameter stored in the third field specifies a range of physical values."**

However, **Mortorana** discloses **"the method of claim 17, wherein, for at least one of the attribute data records, the conversion parameter stored in the third field specifies a range of physical values"** as electronics associated with the instruments in instrument platform 78, FIG. 5 are designed to survive at temperatures of typically 390 degree F. The control electronics may be fabricated from silicon-on-insulator (SOI), which is capable of operating sufficiently up to temperatures of 480 degree F. The fabrication is giving the range of values from 390 degree to 480 degree.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Mortorana's** teaching would have allowed **Chacon** to effectively control the temperature of an inertial measurement unit within an isolating chamber (**Mortorana**

paragraph 0008) by identifying the units of measurement for the attribute such as temperature.

Claim 41 is essentially the same as claim 20 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

Response to Arguments

5. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

See above rejections for response to the arguments.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is listed on 892 form.

Examiner's Note: Examiner has cited particular figures, columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the

references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usmaan Saeed whose telephone number is (571)272-4046. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571)272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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